





Climate-Safe California: The Path Net-Negative Emissions by 2030

Sonoma Co Transportation Authority and Regional Climate Protection Authority

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Mission: Speed and scale greenhouse gas reductions



energy sources

CCA procures clean

IOU delivers energy and maintains the grid

Cleaner energy, local control and competitive rates!

Key role in growing Community Choice Energy: 21 CCAs serving 11 million Californians- ¼ of state- with 88% clean energy today!



6:09 AM Sun Sep 13



California's climate apocalypse

Fires, heat, air pollution: The calamity is no longer in the future — it's here, now

Oregon residents standing ground

By Richard Read, Molly Hennessy-Fiske and Melissa Etehad

MOLALLA, Ore. — Christine VanOeveren grab-



By Susanne Rust and Tony Barboza

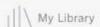
In 2001, a team of international scientists projected that during the next 100 years, the planet's inhabitants would witness higher maximum temperatures, more hot days and heat waves, an increase in the risk of forest fires and "substantially degraded air quality" in large metropolitan areas

as a result of climate char In just the past m nearly two decades aft third United Nations In governmental Panel on Climate Change report was issued, heat records were









Current global climate goals are inadequate

UN IPCC 1.5C Report- Oct 2018

- Emissions must decline by 45% by 2030 to meet 1.5C (2.7°F) limit
- Up to 1000 Gt CO2e must be removed from atmosphere over the decades ahead
- Achieve net-zero emissions by 2050

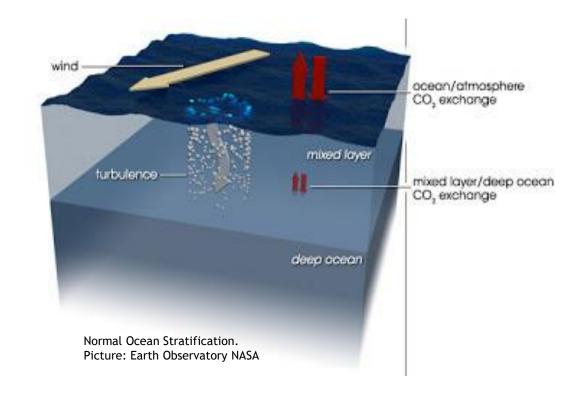


UN operates by consensus so goals are conservative and not enough.
We must do more sooner per new science...

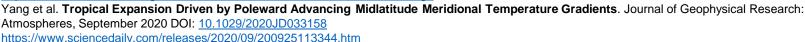


Top layer of ocean heating up & thickening=> more drought, intense storms, & fisheries impacts, and less CO2 absorption

"The impacts of climate change are proving to be worse than we predicted... driving more vicious cycle of warming." -co-author Michael Mann, PhD



Li, et al. Increasing ocean stratification over the past half-century. Nature Climate Change, Sept. 2020 https://doi.org/10.1038/s41558-020-00918-2 New Study Shows a Vicious Circle of Climate Change Building on Thickening Layers of Warm Ocean Water https://insideclimatenews.org/news/28092020/ocean-stratification-climate-change I





Abrupt permafrost thaw doubles previous est.CO2/methane emissions

Not in IPCC 1.5C report models... "How realistic are our projections" without permafrost feedbacks?

"We can definitely stave off the worst consequences if we act in the next decade"

-Merritt Turetsky, PhD

Nitze et al. The catastrophic thermokarst lake drainage events of 2018 in northwestern Alaska: fast-forward into the future. The Cryosphere, 2020; 14 (12): 4279 DOI: 10.1016/journal of this century. In a way, we caught a glimpse of the future." https://www.sciencedaily.com/releases/2020/12/201201124056.htm
Turetsky et al. Nature Geoscience | VOL 13 | February 2020

https://www.sciencedaily.com/releases/2020/02/200203151152.htm

https://www.nationalgeographic.com/science/2020/02/arctic-thawing-ground-releasing-shocking-amount-dangerous-gases/

Western US now in global warming-induced severe megadrought

- 2000 to 2018 was 2nd driest in 1200 years
- Threatens dustbowl & ag economy by as early as 2027 in California
- 2015 drought cost ~\$2.7 billion and 20k lost ag jobs in California











Increasing health impacts especially to most vulnerable communities; extreme heat most deadly; recent smoke storm ~1200+ addl deaths for 65+ yr olds



http://www.who.int/globalchange/en/

Leleiveld et al., Cardiovascular, March 2020; Hoffman et al. Climate Jan 2020 Bekkar et al JAMA June 2020

https://www.nvtimes.com/2020/06/18/climate/climate-change-pregnancy-study.html

https://amp-sacbee-com.cdn.ampproject.org/c/s/amp.sacbee.com/news/california/fires/article245947495.html;

http://www.g-feed.com/2020/09/indirect-mortality-from-recent.html



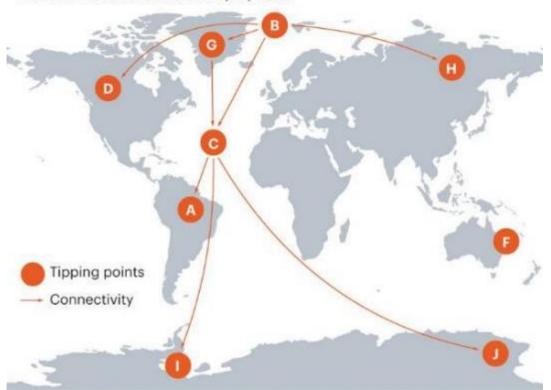
Climate inaction/delay is bankrupting our economy

- Fed Reserve: banks must consider climate risks
- Threatens insurance & mortgage markets, pension funds, and other financial institutions
- \$150 Billion in damages from 2018
 CA wildfires; \$80 Billion in 2019
- \$80 billion invested in California will generate
 ~725,000 jobs
- Investments in clean energy generate more than 2x the jobs as in fossil fuels



RAISING THE ALARM

Evidence that tipping points are under way has mounted in the past decade. Domino effects have also been proposed.



A. Amazon rainforest Frequent droughts

B. Arctic sea ice Reduction in area

C. Atlantic circulation In slowdown since 1950s D. Boreal forest Fires and pests changing

F. Coral reefs Large-scale die-offs

G. Greenland ice sheet Ice loss accelerating H. Permafrost Thawing

I. West Antarctic ice sheet Ice loss accelerating

J. Wilkes Basin, East Antarctica Ice loss accelerating

9 of 15 global tipping points underway now... domino effect to uninhabitable 'hothouse' climate if we don't act soon...

Lenton, Rockstrom, Gaffney, Rahmstorf, Richardson, Steffen, Schyellnhuber.

Nature, Nov 27 2019

https://www.nature.com/articles/d41586-

019-03595-0

https://www.sciencedaily.com/releases/20 19/11/191127161418.htm



"We have underestimated the risks off unleashing irreversible changes ...We are seeing strong evidence already for declaring a state of planetary emergency...

We don't want to push the 'on' buttons of runaway global warming.

The next decade is our window...with consequences for all future generations."



Johan Rockström, Director,
 Potsdam Institute for Climate
 Impacts Research, 2019

https://www.sciencedaily.com/releases/2019/11/1911 27161418.htm

https://sverigesradio.se/avsnitt/1425542 https://medium.com/@rchrdhy/johan-rockstr%C3%B6ms-10-point-agenda-for-saving-the-world-unofficialtranscript-431261f885c6



Threshold for dangerous climate change (>1.5C) likely to be crossed between 2027 and 2042 globally



Raphaël Hébert, Shaun Lovejoy, Bruno Tremblay. **An observation-based scaling model for climate sensitivity estimates and global projections to 2100**. *Climate Dynamics*, 2020;

DOI: <u>10.1007/s00382-020-05521-x</u>

https://www.sciencedaily.com/releases/2020/12/201221160425.htm



The climate reality is outpacing outdated science and policy.

Leaders are now stepping up.



Governor Newsom on Sept. 11, 2020: "We are in a climate emergency... Our goals are inadequate...We must fast-track goals"

New Exec Orders: 100% ZEV new car sales by 2035 & protect 30% of land and waters by 2030.... **But....**





https://defenders.maps.arcgis.com/apps/webappviewer/index.html?id=8fa934ebbee54431bdcbc53d0873ab14



California is behind: New International & Proposed National Climate Targets....

- ✓ LANCET 2020 HEALTH & CLIMATE: called on lawmakers to stop rise of GHGs in next five years; cut GHGs 7.6% per year until 2030 [= 55% below 1990 levels by 2030 in California]
- ✓ UK: cut GHGs 68% by 2030 from 1990 levels & 100% ZEV sales by 2030
- ✓ EUROPEAN UNION: cut GHGs by at least 55% by 2030 ... from 1990 levels to reach net zero emissions by 2050

✓ BIDEN

- Eliminate carbon pollution from power plants by 2035
- Net-zero new buildings by 2030
- Get agriculture to net-zero

✓ SENATE SELECT COMMITTEE ON CLIMATE CRISIS

 Invest 2% annually of GDP w/ 40% to low income communities Note: 2% of CA 2019 GSP \$3.2 trillion = \$64 billion



California must lead for the country and the world to secure a climate-safe future





Need more aggressive policies and accelerated timelines in CA now!



Climate-Safe California Campaign for Rapid Decarbonization

www.theclimatecenter.org

GOAL: By 2025, CA will have enacted the bold policies required by science to dramatically reduce emissions, start drawdown and secure resilient communities by 2030, inspiring global action



Guiding principles for Climate-Safe CA targets, policies and programs

- 1- Based on the latest science
- 2- Ensure a just transition for fossil fuel workers
- 3- Prioritize climate justice: ensure lower-income & BIPOC communities are no longer disproportionately harmed by fossil fuels and have equitable access to climate-friendly solutions





CLIMATE-SAFE CALIFORNIA

Accelerate existing state goals to achieve by 2030:

- 80% below 1990 GHG levels (Schwarzenegger 2005 EO by 2050)
- Net-negative emissions (sequestration greater than emissions, CA becomes net carbon sink) (Brown 2018 EO by 2045)



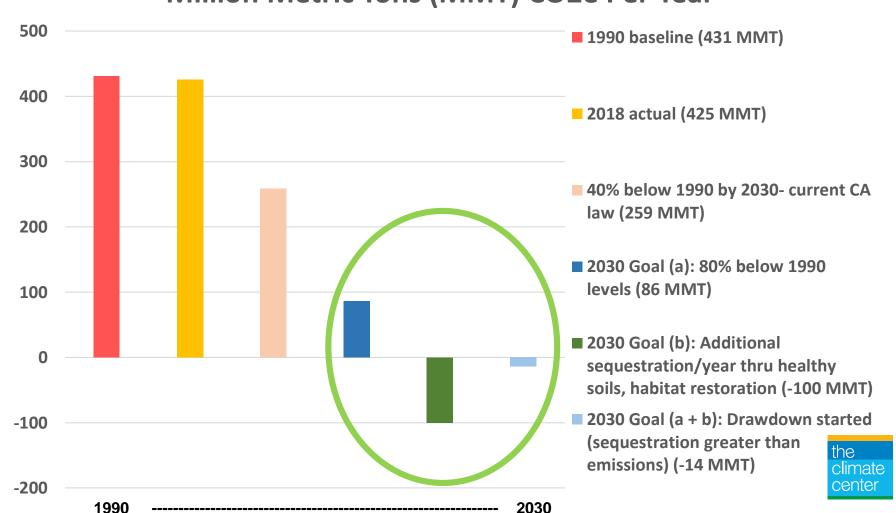




California's measured GHG emissions: where we are & where we need to go by 2030

www.climatesafeca.org

Million Metric Tons (MMT) CO2e Per Year



TYPES OF POLICIES REQUIRED BY SCIENCE TO REACH NET-NEGATIVE EMISSIONS BY 2030

- 1. Accelerate the phase-out of fossil fuel development, production and use
- 2. Scale-up nature-based sequestration to 100 MMT/year by 2030 on natural & working lands
- 3. Invest in community resilience, including clean energy microgrids & storage
- 4. Fund climate action with \$12-20 billion/year and leverage private sector money



770+ endorsements of Climate-Safe California including:

ELECTEDS and APPOINTED

- Congressmen Jared Huffman, Mike Thompson
- State Senators Scott Wiener, Henry Stern, Mike McGuire
- CA State Assoc of Counties,* Chair, James Gore
- County Supervisors Holly Mitchell, Carmen Ramirez
- Angelina Galiteva, CAISO Board member*

SCIENTISTS and ECONOMISTS

- Carl Mears, PhD, UN IPCC
- Dan Kammen, PhD, UC Berkeley*
- Hunter Lovins
- Ben Santers, PhD, LLNL*
- Steve Weissman, PhD, UC Berkeley*

BUSINESS

- Hobo Wines
- Terry Tamminen, Seventh Generation Advisors*
- Ygrene Energy

NGOs

- Alliance of Nurses for Healthy Environments
- Carbon Cycle Institute
- Center for Sustainable Energy
- Central CA Environmental Justice Network
- Joint Venture Silicon Valley
- Local Government Commission
- Mi Familia Vota

FAITH

- Roman Catholic Diocese of Fresno
- Catholic Charities, Stockton





Our house is on fire. Ask at every level of government: are we doing enough?





Request: Endorse Climate-Safe California & take back to your cities/towns for endorsement; letters to the Gov. urging accelerated climate timelines & more \$\$ to local Government for climate action www.climatesafeca.org



Climate-Safe California
Rapid Decarbonization Campaign
Endorsement Platform

- A public pledge of support for California to accelerate aggressive climate policy
- Inspiring states and countries to greater action for a climate-safe Earth



